

RESPONSE

At the outset, the Examiner has objected to the numbering of claims 35-40. The reason for the numbering of those claims as 35-40 is that a paper was filed by Applicant dated March 22, 2000 that included new claims 31-34. Apparently, those claims were never acknowledged by the Examiner or pursued by the Applicant. (This was a paper prepared and filed by Applicant's prior patent attorney.) Accordingly, because claims 31-34 were in fact submitted in connection with the prosecution history of the present application, Applicant submits that it is appropriate that the claims 35-40 are numbered as such. Obviously, the present application file history is complicated, so it is easy to see how claims 31-34 have been overlooked by the Examiner and by the prior patent attorney.

In accordance with the Examiner's rejection under 35 U.S.C. § 112, claims 35-37 have been amended as indicated in the foregoing. Applicant now submits that the claims are definite and that terms contained therein have antecedent basis. The amendment to those claims was made solely for the purpose of clarity as required by the Examiner. These amendments were specifically not made in order to overcome or distinguish the claimed invention from any prior art references.

All of the remaining claims of the present application, 35-40, 21-24 and 27 have been rejected as being obvious pursuant to 35 U.S.C. § 103(a) over

✓ Medley in view of Pearl. Applicant respectfully traverses that rejection for either or both of the reasons discussed in more detail herein. First, Applicant submits that the Pearl and Medley references may not reasonably be combined to teach the claimed invention without departing from the fundamental teachings contained in those references. Alternatively, and as a separate basis for patentability, Applicant submits herewith the Declaration of William J. Slyne as support for the contention of Applicant that there is substantial objective evidence of nonobviousness of the present invention. Specifically, a cutting machine built and operating in accordance with the present invention exhibits significant manufacturing advantages over existing, prior art machines.

Turning first to the Medley reference, there is shown in that patent a method and apparatus for cutting cloth. In order to securely hold and grip the cloth, the web of material is fed through at least two pairs of nip rollers to maintain tension in the web. In between those nip rollers there is a flat cutting surface and/or an air cushion to carry the web. The cutting takes place between the nip rollers on the flat surface or conveyor. Inherently, the web of material between the nip rollers may slip or crease, thereby causing misalignments in the cutting. Also, the feed of the web is a continuous feed. There is no forward and reverse, or back and forth motion disclosed or taught in the Medley reference.

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Turning next to Pearl, Pearl discusses a method and apparatus for cutting irregularly shaped and sized sheet material. Pearl does not and can not cut a continuous web. Pearl requires that the sheet material move in both forward and reverse directions in order to digitize in the first step and cut in the second step a subject sheet. Further, Pearl discloses the use of only one knife. Since the cut out portions of the subject sheet material are fully two dimensional, it is only possible to have one knife, because single unique cuts are performed. There are not two or more knives or simultaneous cuts along the side of the sheet, because this is impossible or at least impractical with the individual cuts envisioned by Pearl. Pearl requires a full 360°, of cutting movement, so it does not teach movement in a similar, parallel direction. This is inherently impossible when cutting parts and pieces from an irregular shaped or sized sheet material. Applicant notes further that Pearl teaches the use of a bristle bed in combination with a vacuum. This belies the actual teaching and disclosure of Pearl which is its use primarily for hides.

Notwithstanding the foregoing contradictory teachings of the Pearl and Medley references, they have been combined by the Examiner. Applicant submits that combination is explicitly improper for at least two reasons. First, the Pearl patent does not teach cutting of a continuous web. It can not possibly operate as a cutting apparatus of a continuous web, because it explicitly needs to be able to move in the forward and reverse directions to digitize and to cut the

work pieces of Pearl. Therefore, the combination of the noncontinuous Pearl teachings with the continuous Medley teachings is inappropriate, because it renders the Pearl patent as unworkable. Second, it is not proper to combine the vacuum/bristle teachings of Pearl with the nip roller teachings of Medley. In other words, Pearl requires a surface that is able to securely retain and hold the work piece. On the other hand, Medley secures the piece between nip rollers and must have smooth or otherwise inadhesive surface over which the continuous web of Medley may pass. (The cylindrical drum cutting surface also performs differently from the flat, Medley cutting surface, because the drum inherently smoothes and flattens the web.) The combination of Pearl and Medley to find a cylindrical cutting surface of a continuous web of material is a significant leap and would render both Pearl and/or Medley inoperable. For one or both of foregoing reasons, the combination of Medley and Pearl is, Applicant submits, not reasonably supported.

In addition to the foregoing, Applicant submits herewith the Declaration of William J. Slyne, the named inventor, to support its arguments of nonobviousness. As is evident from the declaration, Industrial Evolution, the assignee of the present invention, manufactures and sells machines in accordance with the claimed invention. There is a rotating cylindrical cutting surface over which a continuous web of material is passed. The web of material is cut while being rotated over the cylindrical cutting surface. As

shown in the attached declaration, this new claimed machine (the VX Cutter) is compared with a conventional vacuum conveyor that is, in the sense of a flat cutting surface, similar to the Medley apparatus. As noted, the claimed invention is able to cut 40% more products per work shift. In the example of actual manufacturing facility cutting pool liners, the VX Cutter cuts 70 liners per work shift, while the prior art vacuum conveyor only cuts 50 liners per shift. The operation of the VX Cutter is also inherently more simple than the vacuum conveyor. Accordingly, half the staff is required to run the claimed invention. Still further, the floor space required to perform the method of the claimed invention is substantially less than the floor space required to operate the prior art machine. These operational savings are significant and cannot be ignored. The simple fact that the claimed method is 40% more efficient in work product result than a prior art method is significant. These efficiencies would not have been obvious. The combination of prior art urged by the Examiner does not appear reasonable in view of the extraordinary efficiencies of the claimed invention.

For either or both of the reasons of the unreasonable combination of the Pearl and Medley references and the objective evidence of nonobviousness of the claimed invention, Applicant submits that the claimed invention is not obvious over the prior art cited by the Examiner. Applicant submits that the application is in condition for allowance. Favorable action is requested hereon.

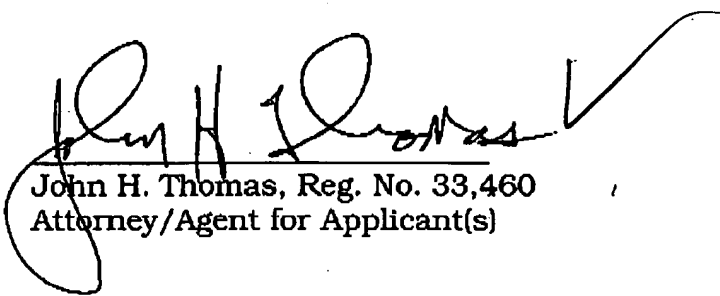
The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 50-2127.

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to Examiner Minh Trinh at the Patent and Trademark Office at facsimile number (703) 305-3579, on the date shown below.



John H. Thomas

Date: November 3, 2003

Claims 1-20 (Canceled)

21. (Twice Amended) A method as claimed in claim ~~1~~ 35, wherein said cutting means is disposed on rail means, said rail means disposed substantially parallel to the axis of rotation of the cylindrical cutting surface.

22. (Amended) A method as claimed in claim 35, wherein said cylindrical cutting surface rotates about an axis of rotation and said cutting means traverses said material in a direction parallel to said axis of rotation so as to cut said material while said material is in rolling contact on said cylindrical surface.

23. A method as claimed in claim 22 wherein said cutting means moves along said rail means so as to cut said material.

24. A method as claimed in claim 23 wherein said cutting means comprises cutting wheel means controlled by computer means for moving said cutting wheel means across said material.

Claims 25-26 (Cancelled)

27. A method as claimed in claim 21 wherein said material is wrapped around the arc of said cylindrical surface, and moves in unison with said rotating cylindrical surface as said cutting means cut said material.

Claims 28-30 (Canceled)

Claims 31-34 (Never Acknowledged)

³¹
~~35~~. (Amended) A method of cutting pattern pieces from a continuous web of material comprising the following steps:

providing at least two cutting means and a rotating cylindrical cutting surface;

advancing the web of material over the cylindrical cutting surface;

moving the cutting means across the cylindrical cutting surface; and

cutting the web of material while rotating the cylindrical cutting surface in only one direction.

³²
~~37~~. (Amended) A method as described in claim ~~35~~ ³¹ further comprising:
providing a hollow cylinder having an outside surface that defines the cylindrical cutting surface, the hollow cylinder having holes therein communicating with the cylindrical cutting surface;

providing a suction air supply in association with the hollow cylinder;
and

creating a vacuum internally of the rotating cylindrical cutting surface
that communicates with the surface.

³³
~~37~~. (Amended) A method as described in claim ~~35~~³¹ further comprising:
driving a cylinder that defines the cylindrical cutting surface internally of
the cylindrical cutting surface.

³⁴
~~38~~. A method as described in claim ~~35~~³¹, wherein the cutting means move
independently of each other.

³⁵
~~39~~. A method as described in claim ~~35~~³¹ further comprising:
providing an air assist means, and unwinding the web of material from
the cylindrical cutting surface using the air assist means.

✓ ³⁶
~~40~~. A method as described in claim ~~35~~³¹, wherein at least one of the
cutting means spans the width of the rotating cylindrical cutting surface.